

REMARKS

I. STATUS OF THE CLAIMS

Claims 1, and 3-18 were pending in the Application. By the present amendment, Claims 4, 5, and 18 have been canceled without prejudice of disclaimer of the subject matter therein. Claims 1 and 17 have been amended. No new matter has been added.

In the Office Action, Claims 1, and 3-16 were rejected under 35 U.S.C. § 103(a) (hereinafter, "Section 103(a)") as being unpatentable over JP No. 03-153523 to Wakasa et al (hereinafter, "Wakasa"), in view of Chapman et al. (U.S. Pat. No. 6,841,609, hereinafter, "Chapman").

Claims 17 and 18 were rejected under Section 103(a) as being unpatentable over Wakasa and Chapman, in further view of Saegusa (U.S. Pat. No. 4,882,133, hereinafter, "Saegusa").

Applicant respectfully traverses all rejections and requests reconsideration.

II. REJECTIONS UNDER SECTION 103(a): WAKASA IN VIEW OF CHAPMAN

Claims 1, and 3-16 were rejected under Section 103(a) as being unpatentable over Wakasa in view of Chapman. Applicant respectfully traverses the Examiner's rejections because a prima facie case of obviousness is not established using Wakasa and Chapman for the reasons stated below.

Claim 1 has been amended to recite in part "A porous metal oxide material in a flake form produced from silicon dioxide (SiO₂) and titanium dioxide (TiO₂)..."

The amendment to claim 1 is supported by Applicant's Specification. For example, see par. [0033] of Applicant's Specification, disclosing that, in Examples 5-6, "colloidal *silica*

... *titania* colloid ... isopropanol ... silicon methoxide and ... water were uniformly mixed in a stirrer”, and “[t]he compound was cured for 18 hours at 50°C to produce a silica-titania sol solution (colloidal solution).” (emphasis added). And the porous metal oxide material in a flake form was produced from the silica-titania sol solution. Id. Moreover, par. [0037] discloses that, in Example 7, “*silica* colloidal ... *titania* particles ... ethanol and ... water were uniformly dispersed and mixed by using bead mills to produce a colloidal solution containing colloidal particles of silicon dioxide and colloidal particles of titanium dioxide.” (emphasis added). The porous metal oxide material in a flake form was produced from the colloidal solution. Id. Therefore, Applicant’s amendment that a porous metal oxide material be produced from silicon dioxide (SiO₂) and titanium dioxide (TiO₂) is supported by Applicant’s Specification.

Neither Wakasa nor Chapman Teach or Suggest All Elements of Amended Claim 1

Amended Claim 1 requires a porous metal oxide material in a flake form “produced from silicon dioxide (SiO₂) and titanium dioxide (TiO₂).” Neither Wakasa nor Chapman, alone or in combination, teach this element, of both “silicon dioxide (SiO₂) and titanium dioxide (TiO₂)” to produce a metal oxide material in flake form having the claimed characteristics in claim 1.

First, Wakasa fails to disclose silicon dioxide (SiO₂) used to produce the porous metal oxide material in flake form. As such, Wakasa cannot teach the combination of silicon dioxide (SiO₂) and titanium dioxide (TiO₂).

Second, in all embodiments described in Chapman there is use of silica. However, Chapman *does not* disclose a porous metal oxide material in a flake form produced from *both*

silicon dioxide and titanium dioxide. The specified combination of silicon dioxide *and* titanium dioxide as required by amended claim 1 is not provided in Chapman.

Therefore, neither Wakasa nor Chapman provides “a porous metal oxide material produced from *silicon dioxide (SiO₂) and titanium dioxide (TiO₂)*” as in amended Claim 1. Both Wakasa and Chapman fail to teach each and every element of amended Claim 1 as required to establish a prima facie case of obviousness. Claim 1 is therefore believed patentable.

Dependent Claims 3-16 include all the limitations of their respective base Claim 1. Accordingly, Applicant respectfully submits that Claims 3-16 are allowable for at least the same reasons described above for base Claim 1, as not all the elements of these claims are taught by the cited references as required to establish a prima facie case of obviousness.

Accordingly, Applicant requests withdrawal of the rejection of Claims 1 and 3-16 under Section 103(a).

III. REJECTION UNDER SECTION 103(a): WAKASA, CHAPMAN AND SAEGUSA

Claims 17 and 18 were rejected under Section 103(a) as being unpatentable over combining teaching of Wakasa and Chapman, in further view of Saegusa. Claim 18 has been canceled. Applicant respectfully traverses the Examiner’s rejection of Claim 17.

Claim 17 has been amended to recite in part “a colloid solution containing colloidal particles of silicon dioxide (SiO₂) and titanium dioxide (TiO₂)”.

Dependent Claim 17 includes all the limitations of its respective base Claim 1. Accordingly, Applicant reiterates the above argument in that neither Wakasa nor Chapman

teaches “a porous metal oxide material produced from *silicon dioxide (SiO₂) and titanium dioxide (TiO₂)*” as required by amended claim 17.

Moreover, Saegusa fails to provide for the deficiency of Wakasa and Chapman. Saegusa illustrates silicon dioxide (SiO₂) and titanium dioxide (TiO₂) independent from one another, but not as a colloid solution together. Out of the seven examples disclosed in Saegusa, Example 2 discloses use of a solution including titanium, but not silica; Examples 5 and 6 disclose use of a solution including silica, but not titanium. (See col. 5 lines 50-60 of Saegusa for Example 2; col. 6 lines 30-35 of Saegusa for Example 5; and col. 6 lines 49-52 of Saegusa for Example 6.) Saegusa *nowhere* discloses a colloid solution of the specific combination of silicon dioxide and titanium dioxide as in Applicant’s amended Claim 17. Thus, Saegusa fails to teach all elements of amended Claim 17.

Therefore, Wakasa, Chapman, Saegusa alone or in combination fail to teach or suggest “a porous metal oxide material produced from *silicon dioxide (SiO₂) and titanium dioxide (TiO₂)*” and “applying a colloid solution containing colloidal particles of silicon dioxide (SiO₂) and titanium dioxide (TiO₂)” as required of Claim 17. The cited references, individually or as combined, fail to teach each and every element of amended Claim 17 as required to establish a prima facie case of obviousness. Claim 17 as a whole, including all base limitations, is believed patentable. Accordingly, Applicant respectfully requests withdrawal of the rejection of Claim 17 under Section 103(a).

IV. CONCLUSION

The above-discussed amendments and remarks are believed to place the present Application in condition for allowance. Should the Examiner have any questions regarding

the above amendments, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,

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